

**What is claimed is:**

1. An apparatus for surface treatment of metallic sheet comprising:

at least one centrifugal blasting machine for blasting solid particles having a mean particle diameter of 30 to 300  $\mu\text{m}$  against a metallic sheet which continuously travels,

said at least one centrifugal blasting machine having a centrifugal rotor having a rotation axis, and being positioned so as the line of intersection between the plane vertical to the rotation axis and the plane of the metallic sheet to become parallel to or  $45^\circ$  or less angle to the direction of travel of the metallic sheet.

2. The apparatus according to claim 1, wherein said at least one blasting machine has a centrifugal rotor having a rotation axis, and is positioned so as the line of intersection between the plane vertical to the rotation axis and the plane of the metallic sheet to become an angle in a range from  $5^\circ$  to  $45^\circ$  to the direction of travel of the metallic sheet.

3. The apparatus according to claim 1, wherein said at least one blasting machine has a centrifugal rotor having a rotation axis, and is positioned so as the line of intersection between the plane vertical to the rotation axis and the plane of the metallic sheet to become parallel to the direction of travel of the metallic sheet.

4. The apparatus according to claim 1, wherein said at least one blasting machine comprises a blasting machine positioned so as the line of intersection between the plane vertical to the rotation axis and the plane of the metallic sheet to become parallel to the direction of travel of the metallic sheet, and a blasting machine positioned so as the line of intersection between the plane vertical to the rotation axis and the plane of the metallic sheet to become an angle in a range from  $5^{\circ}$  to  $45^{\circ}$  to the direction of travel of the metallic sheet.

5. The apparatus according to claim 1, wherein said at least one blasting machine comprises a plurality of centrifugal blasting machines arranged in the width direction of the metallic sheet, and at least two centrifugal blasting machines among the plurality of centrifugal blasting machines are positioned so as the line of intersection between the plane vertical to the rotation axis of the centrifugal rotor and the plane of the metallic sheet to become parallel each other.

6. The apparatus according to claim 1, wherein at least one blasting machine comprises a plurality of centrifugal blasting machines arranged in the width direction of the metallic sheet, and at least two centrifugal blasting machines among the plurality of centrifugal blasting machines are driven by the common driving shaft at the respective centrifugal rotors thereof.

7. A method for producing metallic sheet comprising the step of applying surface treatment to a continuously traveling metallic sheet by blasting solid particles having a mean particle diameter of 30 to 300  $\mu\text{m}$  against the metallic sheet using the surface treatment apparatus for metallic sheet according to claim 1.

8. An apparatus for producing metallic sheet comprising:  
a hot-dip coating line having a coating bath;  
the hot-dip coating line including a cooling device or an alloying furnace after the coating bath; and  
the apparatus according to claim 1 being located at downstream side of the cooling device or the alloying furnace.

9. An apparatus for producing metallic sheet comprising:  
a continuous annealing line having an annealing furnace;  
and  
the apparatus according to claim 1 being located at downstream side of the annealing furnace.